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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,865	10/27/2003	Toshihito Yanashima	020265A	9185
23850	7590	06/15/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/692,865

Applicant(s)

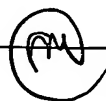
YANASHIMA ET AL.

Examiner

Nguyễn N. Hanh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Remarks*

1. In view of amendments, the Examiner withdraws the objection to claim 15.

The addition of claims 16-19 has been acknowledged.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear about the limitations "secondary permanent magnets each having an arcuate shape curving around the rotating shaft and provided symmetrically about a line that connects two magnetic poles, wherein the secondary permanent magnets have lengths which are radially disposed" because a magnet having an arcuate shape curving around the shaft can not have a length radially disposed. Moreover, none of the drawings shows a magnet having those features. In lights of the specification, the Examiner interprets the limitations as "the secondary permanent magnet each having a linear shape and having length which are radially disposed". Those features were shown in Fig. 30 of the present invention and similar to the limitations in claims 10-12.

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kapadia (US Patent No. 4,568,846).

Regarding claim 7-9, Kapadia discloses a synchronous induction motor comprising: a stator (18 in Fig. 2) equipped with a stator winding (67); a rotor (17) which is secured to a rotating shaft (16) and which rotates in the stator; a secondary conductor (45) provided around the rotor yoke constituting the rotor; and a permanent magnet (41) embedded in the rotor yoke, wherein a magnetic field (52) produced by the permanent magnet does not pass through the rotating shaft (bypass the rotating shaft as in claim 8 or passes through only the rotor yoke, excluding the rotating shaft as in claim 9) as described from line 66 of Col. 2 to lines 2 of Col. 3), and wherein at least one void (50) is located in the rotor yoke between the permanent magnet and the rotating shaft (Fig. 2 and from line 66 of Col. 2 to lines 2 of Col. 3).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al. (US 6,555,940 B2) in view of Liu et al. (US 4,358,696).

Regarding claims 10-12, Naito et al. disclose a synchronous induction motor (preamble, patentable weight not given) comprising: a stator (Col. 2, line 25) equipped with a stator winding; a rotor (10 in Fig. 11) which is secured to a rotating shaft (Col. 6, lines 10-12) and which rotates in the stator; a permanent magnet (in slits 12B) embedded in the rotor yoke which does not have a length radially disposed; and secondary permanent magnets (in slits 12C of Fig. 11) each having a linear shape and provided symmetrically about a line that connects two magnetic poles, wherein the secondary permanent magnets have lengths which are radially disposed, and wherein the secondary magnets are substantially adjacent to the rotating shaft, wherein a magnetic field (as shown in Fig. 2) produced by the permanent magnet does not pass through the rotating shaft (or bypass the rotating shaft as in claim 11, or passes through only the rotor yoke, excluding the rotating shaft as in claim 12). Naito et al. fail to show a secondary conductor provided around the rotor yoke constituting the rotor.

However, Liu et al. disclose a synchronous induction motor wherein a secondary conductor provided around the rotor yoke constituting the rotor for the purpose of improving motor performance characteristics.

Since Naito et al. and Liu et al. are in the same field of endeavor, the purpose disclosed by Liu et al. would have been recognized in the pertinent art of Naito et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Naito et al. by using a secondary conductor provided around the rotor yoke constituting the rotor as taught by Naito et al. for the purpose of improving motor performance characteristics.

Regarding claims 16-18, it noted that all limitations of the claimed invention have been fulfilled by Naito et al. and Liu et al. as in claims 10-12.

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapadia in view of Narita et al.

Regarding claims 13-15, Kapadia shows all limitations of the claimed invention except showing the synchronous induction motor wherein said at least one void has a shape of an arc of a circle.

However, Narita et al. disclose a permanent magnet rotor wherein at least one void (13a in Fig. 15) has a shape of an arc of a circle for the purpose of preventing short-circuiting and leaking of the magnetic flux.

Since Kapadia and Narita et al. are in the same field of endeavor, the purpose disclosed by Narita et al. would have been recognized in the pertinent art of Kapadia.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Kapadia by forming the void with an arc shape of a circle as taught by Narita et al. for the purpose of preventing short-circuiting and leaking of the magnetic flux.

### ***Response to Arguments***

6. Applicant's arguments filed on 3/25/2005 have been fully considered but they are not persuasive.

Regarding claims 7-10, the applicant's argument is on the ground that "Fig. 2 of Kapadia shows magnetic flux 54 leaking into the shaft 16, this is in contrast to the present invention in which the magnetic field provided by the permanent magnet does

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not pass through the rotating shaft". The Examiner respectfully disagrees with the Applicant because the claims only recite a magnetic field produce by the permanent magnet does not pass through the rotating shaft. Fig. 2 of Kapadia clearly show a magnetic field (54) does not pass through the shaft. The claims do not require all the magnetic not passing through the shaft. Figs. 24, 26, 28 and 30 of the present invention also show a portion of the field still pass the shaft.

Regarding claims 10-12, Fig. 11 of Naito et al. clearly show a magnet embedded in slit 12C having a linear shape.

For the reasons explained above, the rejection is still deemed proper.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Information on How to Contact USPTO***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

June 10, 2005

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800